

## **REMARKS/ARGUMENTS**

The Examiner is thanked for the review of the application.

Claims 1-4, and 6-11 remain in this application. Claims 1 and 3 have been amended. No new claims have been added. No new matter has been added.

### **I. Claims 1 and 3 rejected under 35 USC § 112**

A. Claims 1 and 3 have been amended to better comply with the written description requirement of USC § 112.

In the Office Action dated July 17, 2007, the Examiner rejected Claims 1 and 3 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Regarding this rejection the Examiner has stated that “in the instant case, the following limitation is not supported by the specification ‘further wherein each said demand group is defined by a user such that each said demand group is unique to said user’.

Claims 1 and 3 have been amended, in pertinent part, as follows:

Claim 1. A computer-implemented method for creating a product sales model . . .

creating, using the computer system, a plurality demand groups, wherein each demand group is a user defined group of highly substitutable products, further wherein each demand group is a set of, at least one product and at least one of the demand groups is, a set of at least two products, ~~further wherein each said demand group is defined by a user such that, each said demand group is unique to said user;~~

(deleted sections shown in strikethrough);

Claim 3. A computer program product in a computer-readable media . . .

a coefficient estimator coupled to the imputed variable generator, and wherein imputed variables generated by the variable generator are used by the coefficient estimator to create a demand group sales model as a function of price, wherein said demand group sales model provides a single model for modeling sales of all of the products in each said demand group, wherein each said demand group is a user defined group of highly substitutable products further wherein each said demand group is defined by a user such that each said demand group is unique to said user

(deleted sections shown in strikethrough).

In support of the amendments, Applicants respectfully draw the Examiner's attention to selected passages of the specification which state that “[a] category is defined as a set of substitutable or complementary products, for example, ‘Italian Foods’. Such categorization can be proscribed by the client or defined by generally accepted product categories.” (see specification as filed, page 14, lines 18 to 20). Furthermore the specification states that “[the] supplemental file can be input into a spreadsheet program (e.g., Excel®) which can use the product information to define ‘demand groups’ (i.e. groups of highly substitutable products).” (see specification as filed, page 16, lines 18 to 21).

In the instant amendment, Applicants have deleted from claims 1 and 3 the limitations leading to the respective § 112 rejections, namely “further wherein each said demand group is defined by a user such that each said demand group is unique to said user”. As such, Applicants respectfully traverse the rejection.

**II. Claim 1 rejected under 35 USC § 103 as being unpatentable over Ouimet et al. (US 6,078,893), and further in view of Garg (US 6,044,357).**

**A. Ouimet et al. and Garg do not disclose all of the claim limitations of claim 1.**

Applicants respectfully submit that the present invention is nonobvious over Ouimet et al. and Garg because the cited references neither teach nor suggest each and every element of claim 1.

“A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *Graham v. John Deere Co.*, 383 U.S. 1, 13 (1966). Further, “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974); MPEP 2143.03.

1. Neither Ouimet nor Garg disclose a ‘demand group’ as recited in claim 1.

Regarding Claim 1, the Examiner has stated that “Ouimet et al. discloses: . . . Creating, using the computer system, a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group, (col. 6, lines 5-11, [shows a one-dimensional demand model which scales the amount of sales, in this case, the variables are simply the prices  $\{p\}$ , and demand parameters  $qi$  scales the amount of sales and  $gi$ , which describes the sensitivity of the item to price]), further wherein said demand group sales model provides a single model for modeling sales of all the products in each said demand group, (Col. 6, lines 12-15, shows more complicated models where a demand model which is a nonlinear cross-correlation between the variables of different items, which represent products).”

Applicants respectfully submit that Ouimet ‘893 does not teach or suggest “[c]reating, using the computer system, a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group” as claimed in Claims 1. (Emphasis added).

Contrary, Ouimet discloses “a system of coupled equations that describe the demand for each item . . .” (Emphasis Added). (See Column 5, lines 60 to 63). Ouimet discloses the possible use of a “demand model in which there is nonlinear cross-correlation between the variables of different items;” however, here demand models are still generated for *each item*. (See column 6, lines 12-16). There appears to be no suggestion in Ouimet of determining a demand model for the entire ‘group’.

The present invention as claimed in Claim 1 generates a demand model for a demand group. Ouimet does not appear to teach or suggest demand modeling for demand groups. Thus Ouimet determines demand for each product individually, which requires significant processing

resources. Contrary, the present invention as claimed in Claim 1 generates demand for a demand group, which requires fewer processing resources, and may provide valuable information about demand groupings that Ouimet is unable to provide.

Moreover, in the same Office Action, regarding Claim 1 Examiner states that “Garg discloses: wherein each demand group is a group of highly substitutable products, (Col. 13, line 65, shows inventory maintenance is implemented for products which means that these products are replaceable through inventory stock, w/Col. 14, lines 55-58 and col. 15, lines 17-18 and lines 24-26, shows the selection of a first marketing mix, a selection of another marketing mix, and then the identification of which marketing mix generates the largest profit/loss, in this case, one marketing mix for products can be substituted for another marketing mix for the highest profit or loss outcome). Garg discloses this limitation in an analogous art for the purpose of showing that products within marketing mixes are interchangeable. It would have been obvious to one of ordinary skill in the art at the time of the applicant’s invention for each demand group to be a group of highly substitutable products with the motivation of having the ability to replace the products when needed.”

Applicants respectfully submit that Garg ‘357 does not teach or suggest “wherein each demand group is a group of highly substitutable products” as claimed in Claims 1 and 3.

Garg discloses “marketing mix variables, each of said variables representing marketing strategies for each of a plurality of brands of goods” (See Column 14, lines 45-47). Additionally, Garg discloses “then selecting another sub-plurality of marketing mix variables, representing another marketing strategy, and calculates another estimated total profit/loss value.” (See Column 3, lines 39-41). It appears that Garg discloses an iterative process of selecting groupings of brands and determining profits. At the end of the iterative process, the grouping of brands with the highest profits is identified. Garg discloses grouping of brands, not individual products.

Moreover, these groupings, as disclosed in Garg, are only limited by “feasible marketing strategies.” (see Column 3, lines 12-13). Thus, the selection of variables by Garg does not teach or suggest selecting “demand groups” of “substitutable products.” (Emphasis added). As such, Applicants respectfully traverse the rejection.

2. Neither Ouimet nor Garg disclose a ‘demand group sales model’ as recited in claim 1.

As discussed above, Applicants respectfully submit that Ouimet '893 does not teach or suggest “a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group” as claimed in Claims 1. Ouimet discloses “a system of coupled equations that describe the demand for each item . . .” (See Column 5, lines 60 to 63). Garg discloses “marketing mix variables, each of said variables representing marketing strategies for each of a plurality of brands of goods” (See Column 14, lines 45-47). As such, Garg discloses an iterative process of selecting groupings of brands and determining profits. At the end of the iterative process, the grouping of brands with the highest profits is identified. Garg discloses grouping of brands, not individual products.

Hence, even if one were to combine Ouimet with Garg, this combination does not teach or suggest “[c]reating . . . a plurality demand groups, wherein each demand group is a group of highly substitutable products” and “[c]reating . . . a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group . . .” in the manner claimed in Claim 1.

As such, Applicants respectfully traverse the rejection.

B. There is insufficient evidence of record of a motivation to combine Ouimet et al. and Garg in a manner meeting the invention as recited in claim 1.

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007). In *KSR*, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248.” *KSR*, 127 S.Ct. at 1739, 82 USPQ2d at 1395 (citing *Graham*, 383 U.S. at 12, 148 USPQ at 464). The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 1740, 82 USPQ2d at 1396. The Court noted that “[t]o facilitate review, this analysis should be made explicit.” *Id.*, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements;

instead, there must be **some articulated reasoning** with some rational underpinning to support the legal conclusion of obviousness") (emphasis added).

1. Prima facie case of obviousness needs to provide evidence of a motivation to combine the applied references in a manner that meets the features of the claimed invention.

- a. Product sales model.

In the same Office Action, regarding Claim 1, Examiner states that “Creating, using the computer system, said product sales model by combining said demand group sales model and said internal market share model, wherein said product sales model models sales for individual products, further wherein said product sales model combines said demand group sales model and said internal market share model to produce said product sales model for individual products, (Col. 6, lines 63-64, where the user selects a figure-of-merit function to be used to tune the demand model to the sales history, thereby creating a resulting demand model that conforms to the portions of the sales history data that shows a strong trend, and conform to the external market information when the corresponding portions of the sales history data show noise as shown in the abstract, lines 13-17, w/Col. 6, lines 12-15, shows a demand model which is a nonlinear, cross-correlation between the variables of different items, which represent individual products.”

Applicants respectfully submit that Ouimet '893 does not teach or suggest “[c]reating, using the computer system, said product sales model by combining said demand group sales model and said internal market share model, wherein said product sales model models sales for individual products, further wherein said product sales model combines said demand group sales model and said internal market share model to produce said product sales model for individual products” in the manner of Claim 1.

Ouimet appears to “tune the demand model to sales history” using a “figure-of-merit function.” (See Column 6, lines 63-65). Figure-of-merit functions are well known in the art as used to characterize the performance of a model relative to actual data. Thus the cited reference

appears to be entirely concerned with tuning of the demand model of Ouimet to better fit “sales history.” (See Column 6, line 64).

On the other hand, the present invention discloses in Claim 1, “[c]reating . . . product sales model by combining said demand group sales model and said internal market share model.” In the present invention the share model and the demand model are utilized to compute the product demand model. This combination of models to generate a unique demand model is distinct from a simple tuning process which simply adjusts the existing model to better fit a data set.

Hence, even if one were to combine Ouimet with Garg, this combination does not teach or suggest “[c]reating . . . a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group . . .” and “[c]reating . . . product sales model by combining said demand group sales model and said internal market share model . . .” in the manner claimed in Claim 1.

None of the cited art disclose all of the limitations of claim 1. Furthermore, even if one were to construe the disclosures of the cited art to disclose said limitations, there is no disclosure of a motivation to combine in a manner which gives the functionality of the instant invention. The instant invention discloses a demand group sales model for all of the products in a demand group which may be created and used in conjunction with a market share model which gives the fraction of sales of each product in the demand group to create a product sales model by combining said demand group sales model and said market share model. None of the sales models disclosed in the cited art functions in such a way as to combine a group sales model and an individual product market share model in order to produce an overall product sales model. As such, any asserted combination fails to meet the ‘functionality test’ outlined in *KSR, supra*.

As such, Applicants respectfully traverse the rejection.

C. Claims 2, 6-8 and 10, are similarly deemed patentable due at least to their depending from claim 1.

Claims 2, 6-8 and 10 depend from claim 1. Applicants respectfully submit that said claims are also patentable for at least the same reasons as discussed above in reference to claim 1.

**III. Claim 3 rejected under 35 USC § 103 as being unpatentable over Chavez et al. (US 6,684,193) and further in view of Ouimet et al. (US 6,078,893).**

A. Chavez et al. and Ouimet et al. do not disclose all of the claim limitations of claim 3.

Applicants respectfully submit that the present invention is nonobvious over Chavez et al. and Ouimet et al. because the cited references neither teach nor suggest each and every element of claim 1.

1. Neither Chavez nor Ouimet disclose a ‘demand group’ as recited in claim 3.

In the instant Amendment, claim 3 has been amended to read, in pertinent part:

Claim 3. A computer program product in a computer-readable media . . .

a coefficient estimator coupled to the imputed variable generator, and wherein imputed variables generated by the variable generator are used by the coefficient estimator to create a demand group sales model as a function of price, wherein said demand group sales model provides a single model for modeling sales of all of the products in each said demand group, wherein each said demand group is a user defined group of highly substitutable;

(emphasis added).

As such, claim 3 as amended more clearly delineates the ‘demand group’ limitation as disclosed in claim 1. As discussed above, Ouimet ‘893 does not teach or suggest “[c]reating, using the computer system, a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group” as claimed in Claims 1. (Emphasis added).

Contrary, Ouimet discloses “a system of coupled equations that describe the demand for each item . . .” (Emphasis Added). (See Column 5, lines 60 to 63). While Ouimet discloses the

possible use of a “demand model”, there is no suggestion or teaching of a ‘demand group’ as taught by the instant invention.

Regarding Chavez, there is no teaching or suggestion in the reference of a demand group as taught in claim 3 of the instant invention. Nor is there any suggestion by the Examiner as to any disclosure in Chavez regarding a demand group. Nowhere in the cited references is the demand group limitation of claim 3 taught or suggested. As such, Applicants respectfully traverse the rejection.

2. Neither Chavez nor Ouimet disclose a ‘demand group sales model’ as recited in claim 3.

Regarding Claim 3, the Examiner has stated that “Chavez et al. discloses: . . . A coefficient estimator coupled to the imputed variable generator, and wherein imputed variables generated by the variable generator are used by the coefficient estimator to create a demand group sales model as a function of price, wherein said demand group sales model provides a single model for modeling sales of all of the products in each said demand group, an internal market share model, and a combined product sales model, wherein said product sales model models sales for individual products, further wherein said product sales model combines said demand group sales model and said internal market share model to produce said product sales model for individual products, [col. 15, lines 6-14, [shows an example of how the revenue coefficient is incorporated into modeling the value function in a manner to account for interactive effects between the refinements and the resources that comprise that particular model], w/ (Col. 6, lines 12-15, shows more complicated models where a demand model which the is a nonlinear, cross-correlation between the variables of different items, which represent individual products).”

Applicants respectfully submit that Chavez et al. does not teach or suggest “create a demand group sales model as a function of price, wherein said demand group sales model provides a single model for modeling sales of all of the products in each said demand group” as stated in Claim 3.

Rather, Chavez et al. discloses “nonlinear, cross-correlation between the variables of different items.” (See Column 6, lines 12-15). Thus, Chavez et al., while taking into account

product demand elasticity, does not disclose generating a demand model for a demand group. Chavez et al. does not even appear to disclose product grouping of any sort, let alone by highly substitutable products as a demand group. As such, Applicants respectfully traverse the rejection.

B. Claims 4, 9 and 11, are similarly deemed patentable due at least to their depending from claim 1.

Claims 4, 9 and 11 depend from claim 3. Applicants respectfully submit that said claims are also patentable for at least the same reasons as discussed above in reference to claim 3.

**IV. Claim 6 rejected under 35 USC § 103 as being unpatentable over Ouimet et al. (US 6,078,893), and further in view of Garg (US 6,044,357).**

A. Ouimet et al. and Garg do not disclose all of the claim limitations of claim 6.

1. Neither Ouimet nor Garg disclose a ‘equivalizing factor’ as recited in claim 6.

Regarding Claim 6, the Examiner has stated that “Ouimet et al. discloses: Defining an equivalizing factor for the products of each demand group, (Col. 4, line 66-Col. 5, line 6).”

Applicants respectfully submit that Ouimet ‘893 does not teach or suggest “defining an equivalizing factor for the products of each demand group” in the manner of Claim 6.

The cited reference by the Examiner addresses Ouimet’s disclosure that “the user selects a figure-of-merit function, which is a function that attains a minimum value when the parameters of a model are adjusted to match as closely as possible to known data.” (See Column 4, line 66-Col. 5, line 6). A figure-of-merit function is unsuitable to be used to equvalate volumes, or sizes, of products to one another. The cited art appears to have nothing to do with equivalizing factor or demand groups as disclosed in the present invention. Instead the cited art appears to only be concerned with tuning demand models to “sales history.” (See Column 5, line 5).

The instant invention determines an equivalizing factor to facilitate comparisons between different size products in a demand group. As a result, a demand group sales model for all of the products in a demand group may be created and used in conjunction with a market share model which gives the fraction of sales of each product in the demand group to create a product sales model by combining said demand group sales model and said market share model. None of the cited art teach nor suggest an equivalizing factor as recited in claim 6. As such, Applicants respectfully traverse the rejection.

**V. Claim 10 rejected under 35 USC § 103 as being unpatentable over Ouimet et al. (US 6,078,893), in view of Garg (US 6,044,357) and further in view of Chavez et al. (US 6,684,193).**

A. Ouimet et al., Garg and Chavez et al. do not disclose all of the claim limitations of claim 10.

1. Neither Ouimet nor Garg disclose a ‘equivalizing factor’ as recited in claim 6.

Regarding Claim 10, the Examiner has stated that “Ouimet et al. discloses: defining an equivalent price for each said product using said equivalizing factor; defining equivalent units sold for each said product using said equivalizing factor; defining an equivalent base price for each said product using said equivalizing factor; defining equivalent base units sold for each said product using said equivalizing factor, (col. 5, lines 1-12, shows that the figure of merit function entered by the user, which depends upon a selected demand model is equivalent to a standard function (x squared), and gives an example of the sales history for a particular item as it relates to the selected model, therefore any function entered by the user will have an equivalent x squared function associated with it, w/col. 6, lines 5-11, shows that price is a constant equal to the average price of the item); creating a demand group equivalent sales model based on said equivalent price and said equivalent units sold, see above paragraph, col. 5, lines 1-12, demand model); creating, using the computer system, an equivalent product sales model by combining said demand group equivalent sales model and said equivalent internal market share model,

wherein said equivalent product sales model models equivalent sales for individual products, (Col. 6, lines 63-64, where the user selects a figure-of-merit function to be used to tune the demand model to the sales history, thereby creating a resulting demand model that conforms to the portions of the sales history data that shows a strong trend, and conform to the external market information when the corresponding portions of the sales history data show noise as shown in the abstract, lines 13-17, w/Col. 6, lines 12-15, shows a demand model which is a nonlinear, cross-correlation between the variables of different items, which represent individual products); . . . Garg discloses: creating, using the computer system, an internal a market share model wherein said internal market share model determines the fraction of the internal sales of each demand group comprised by each product, (col. 5, lines 38-41, [market share model to characterize the demand distribution for each brand, in this case, the group is represented by the brand, and the demand distribution represents a different demand resulting from sales for each product. The demand distribution will therefore vary for each brand, and therefore represents fraction of the sales] . . . Chavez et al. discloses: indexing said demand group equivalent sales model by divided said demand group equivalent sales by baseline demand group equivalent sales, (Col. 10, lines 7-25, shows that the baseline demand is considered when dealing with modeled parameters). Chavez et al. discloses this limitation in analogous art for the purpose of showing that baseline demand serves as a part of modeling demand. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to index the demand group equivalent sales model by divided said demand group equivalent sales by baseline demand group equivalent sales with the motivation of showing a demand model based on baseline demand.”

Applicants respectfully submit that Ouimet, Garg nor Chavez et al. teach or suggest even the existence of an “equivalizing factor” in the manner of Claim 10. As previously stated, the cited reference by the Examiner addresses Ouimet's disclosure that “the user selects a figure-of-merit function, which is a function that attains a minimum value when the parameters of a model are adjusted to match as closely as possible to known data.” (See Column 4, line 66-Col. 5, line 6). A figure-of-merit function is unsuitable to be used to equate volumes, or sizes, of products to one another. The cited art appears to have nothing to do with equating factor between products of a demand group as disclosed in the present invention. Instead the cited art appears to only be concerned with tuning demand model to “sales history.” (See Ouimet

Column 5, line 5). Without the disclosure of an “equivalizing factor” the rejection is moot, since the “equivalizing factor” is utilized in every step on Claim 10. As such, Applicants respectfully traverse the rejection.

**VI. SUMMARY AND CONCLUSION**

In sum, base Claims 1 and 3 have been amended, and base Claims 1 and 3 are now believed to be allowable. Dependent claims 2, 4, 6-11 which depend therefrom are also believed to be allowable as being dependent from their respective patentable parent claims 1 and 3 for at least the same reasons. Hence, Examiner’s rejection of dependent Claims 2, 4, 6-11 are rendered moot in view of the arguments made to independent Claims 1 and 3. Applicants believe that all pending claims 1-4, 6-11 are now allowable over the cited art and are also in allowable form and respectfully request a Notice of Allowance for this application from the Examiner.

The commissioner is authorized to charge any additional fees that may be due to our Deposit Account No. 50-2766 (Order No. DEM1P003). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at telephone number 925-570-8198.

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